October 7, 1994

MEMORANDUM FOR THE RECORD

SUBJECT: INFORMATION PROCESSING DIVISION (IPD) CONFIGURATION CONTROL BOARD (CCB) MEETING TO CONDUCT THE LANDSAT 7 SYSTEM REQUIREMENTS REVIEW

The IPD CCB convened at 8:30 a.m., October 6, 1994, in Building 16W, Room N76 to conduct the subject review.

Enclosure 1 reflects pertinent aspects of the discussion that transpired. No action items were assigned.

Members of the CCB were:
D. Giblin/Code 560, Chairman
J. Jackson/Code 562
E. Beard/Code 563
C. Wilkinson/Code 564
W. Kelly/Code 563, IPD Systems Engineer
E. Rothenberg/Code 562, IPD DPI-AISO

Other Attendees were:

J. Andary/Code 430
E. Valencia/Code 564
R. Schweiss/Code 564
G. Henegar/Code 564
F. Stone/Code 430
J. Henegar/Code 563
J. Smith/Code 505
D. DeVito/Code 505
M. Robbins/Code 564
T. Mitler/Code 430
E. Lee/Code 564
T. Ackerson/Code 505
D. Williams/Code 923
T. Rykowski/Code 560
A. Caroglanian/Code 531
C. Taveras/Code 531
A. Krimchansky/Code 560
F. McCalab/Code 563
J. Martin/Code 501
K. Michael/Code 564
C. Brambora/Code 564
K. Lehtonen/Code 563
S. Jurczyk/Code 430
D. Knapp/Code 501
S. Johnston/Aerospace/430*
M. Bucko/ATSC/519.1
J. Brophy/ATSC/Columbia
V. Buczkowski/ATSC
M. Blizzard/ATSC*
P. Province/ATSC

T. Aslam/CSC
P. Kay/CSC
B. Bacon/CSC
S. Priest/CSC
D. Suit/CSC/519
A. Hall/CSC
B. Cohen/CSC
T. Sawanobori/CSC
D. Specht/CSC
D. Riggs/CSC/502
D. Denzler/CSC/502
J. Landerdale/CSC/519
L. Gonzales/CSC/430
R. Rensvold/CSC/502
J. Freeman/CSC
S. Ambardar/Hughes
S. Bunaszah/Loral
B. Boyce/Loral*
T. Keller/MM
T. Arvidson/MM
M. Gerner/MM
R. Forsht/MM
H. Wong/Miter
M. Mignogno/NOAA
J. Ellickson/NOAA
R. Tingley/NYMA
J. Donley/SWALES/430*
H. Stinger/SWALES/430*
J. Unekis/USGS

Prepared by: Approved by:

Philip E. Province/IPD
CCB Administrator

Dennis M. Giblin/IPD
CCB Chairman

Distribution:
CCB Members
Other Attendees except*
W. Stallings/Code 560

Enclosure 1 (1 of 6)

IPD CCB MEETING OCTOBER 6, 1994 TO CONDUCT THE
LANDSAT 7 SYSTEM REQUIREMENTS REVIEW

Pertinent questions/answers and comments that transpired during the subject IPD CCB meeting are contained herein.

OPENING REMARKS - D. DeVito/Code 505

1. Question: When will the Level 2 requirements be boarded? (D. DeVito)
   Answer: They are scheduled for October 26th. (J. Andary)

INTRODUCTION - E. Valencia/Code 564

2. Question: What is the status of the IRD? (J. Andary)
   Answer: It is currently a working draft. Hughes is working this issue. (J. Smith)

SYSTEM CONCEPT - E. Valencia/Code 564

3. Question: Will the system handle two playbacks concurrently?
   Answer: Yes, the system can handle any combination of playback and realtime data. (E. Valencia)

4. Question: Are two shifts for operations being planned?
   Answer: No, three shifts are being planned. (E. Valencia)

5. Question: What is the length of a ground contact?
   Answer: It is 5 to 14 minutes. (E. Valencia)

6. Question: How long does it take to recover from a failed LPS String?
   Answer: We have defined MTTR requirements. (E. Valencia)

   Question: How will you handle data lost during a failure?
   Answer: The LPS shall notify the MOC when a string failure is detected that resulted in loss of data.
   Question: Does the station retransmit data too?
   Answer: No. (E. Valencia)

7. Question: Do you have a requirement to combine data intervals? (J. Andary)
   Answer: No. (E. Valencia)

8. Question: Will the MOC have to segment the data for contacts if required to complete an interval?
   Answer: Yes. (E. Valencia)

9. Question: How do you handle redundant data?
   Answer: We do not delete redundant data. It will be archived. (E. Valencia)

10. Question: Will you produce a Browse Image file with a monochrome file and a multiband file?
    Answer: There was much discussion on this issue. It was concluded that there should be separate Browse Image files.

11. Question: When is the Return Link Quality and Accounting Data available?
Answer: The return link characteristics file contains the quality data, and it is available after processing is completed. (E. Valencia)

12. Question: What happens when there are three separate intervals within a given contact period?
Answer: Three separate files will be produced. (E. Valencia)

13. Question: What if a user wants a specific scene?
Answer: The LP DAAC must retrieve the scene. (E. Valencia)

14. Question: Where is the information for aligning the data in the data stream from?
Answer: IAS sends the alignment tables for aligning the data. (E. Valencia)

15. Question: What is "LGS Preprocessing"?
Answer: Demodulation and bit synchronization are all that is done. (E. Valencia)

16. Question: Does the "Generate Level 0 R files" function generate the "Return Link Quality and Accounting" data?
Answer: Yes, the LPS Functional Diagram is incorrect in this area.

17. Question: What defines a sub-interval of data?
Answer: Either the contiguous wideband data received during a contact or data drop-outs define a sub-interval.

SYSTEM REQUIREMENTS - E. Valencia/Code 564

18. Question: Are there timing requirements related to the start-up and shut-down capabilities?
Answer: No. (E. Valencia)

Comment: The system availability requirements should "flow down" into timing requirements. (J. Andary)

19. Comment: Requirement 3.1.3 should be corrected to read "LPS shall provide the capability to receive, record, process, and deliver.....".

20. Question: How does the 12 Mbps in Requirement 4.1.6 relate to the 7.5 Mbps requirement? (J. Andary)
Answer: This makes up for the time the LPS is not processing. (E.

Valencia)

21. Question: Have you processed at 7.5 Mbps previously? (J. Andary)
Answer: We have prototyped that we can in fact process at this rate and maybe even more. (E. Valencia)

22. Question: When will the on-line storage requirement be resolved? (D. Giblin)
Answer: We need a resolution by March. (E. Valencia)

23. Question: How big is a scene?
Answer: It is 450 megabytes per scene for raw capture.

24. Question: How long is a subinterval?
Answer: It can be from 30 seconds to 14 minutes. (D. DeVito)

25. Comment: Requirement 4.4.3 needs to be reworded for clarification. (D. Giblin)

26. Question: When does the time for the MTTR measurement start?
Answer: It is when the failure is detected. (D. DeVito)

Comment: It should include the time between when the failure occurred and when it was detected.

27. Question: Are there RMA requirements on the subsystems? (D. Giblin)
Answer: No. (E. Valencia)

FUNCTIONAL REQUIREMENTS - R. Schweiss/Code 564

28. Question: What does the asterisk with the requirement number mean?
Answer: It means that the wording in the presentation material is not identical to the document. (R. Schweiss)

29. Question: What does Requirement 3.3.1.12 mean? (D. Giblin)
Answer: It means the system will flywheel and not crash. Some data will be lost. (R. Schweiss)

Question: Do we need a requirement like this? (W. Kelly)
Answer: I think this requirement needs to be reworded for testing purposes. (D. Giblin)

30. Question: In Requirement 3.3.2.29, what does "identify the presence of calibration door activities" mean? (J. Andary)
Answer: There will be an indicator that the door is closed. (E. Valencia)

31. Question: Can you view the browse data? (A. Krimchansky)
Answer: The capability is currently unfunded. (D. DeVito)

32. Question: In Requirement 3.3.3.2, why do you specify predetermined bands instead of selectable bands? (J. Jackson)
Answer: It will be selectable but not while processing is occurring. (E. Valencia)

33. Question: In Requirement 3.3.4.7, what is the significance of using the WRS?
Answer: Scenes are located based on Orbit and Attitude for identification during a browse.

34. Comment: A lot of the questions will be better answered during the review of the ground system. (D. DeVito)

35. Question: In Requirement 3.3.4.8, what does "capability to perform automatic cloud cover assessment for WRS scenes" mean? (J. Andary)
Answer: A percent such as 50 percent coverage per scene will be provided. (R. Schweiss)

36. Question: Are you looking at different levels of cloud cover? (J. Jackson)
Answer: Yes, we are looking at three bands. (R. Schweiss)

Comment: In determining cloud cover, the threshold can be changed during the mission.

Comment: There is currently one cloud cover assessment planned per scene with TBR for scene quadrant cloud cover assessment. (E. Valencia)

Comment: We need to write a RID for this area. (D. DeVito)

37. Question: For Requirement 3.3.5.4, what is the upper limit on the time the LPS will store the data files for transfer to the LP DAAC? (D. Giblin)
Answer: If you exceed storage, the data will be archived. (R. Schweiss)

Comment: There is currently an eight hour requirement for holding the data for transfer to the LP DAAC.

PERFORMANCE REQUIREMENTS - R. Schweiss/Code 564

38. Comment: For Requirement 4.3.5, the system must locate the scene to the accuracy needed to identify the scene for the user. It

doesn't need to be within 400 meters. The actual value will be determined with the Project. (D. DeVito)

Comment: We have some homework to do in this area. (J. Andary)

39. Question: Is there an external requirement on the timing of the availability of quality data? (J. Ellickson)
Answer: It will be available as soon as the data is processed. (E. Valencia)

Comment: The MOC can be notified if quality problems exist as they are detected. (D. DeVito)

Comment: Any LGS quality problems are known by the MOC in realtime. (C. Wilkinson)

Comment: The LPS should phone the MOC when there is a problem. (D. DeVito)

40. Comment: There was much discussion on determining that scene data was received successfully.

Comment: We need some indication that the data from the solid state recorder was received successfully. (J. Andary)

41. Comment: The spacecraft has more onboard capabilities than can be utilized by the ground system due to budget constraints on the ground system. (D. DeVito)

42. Comment: We could check to see if we received the data volumn that was predicted by the MOC if we have disk data capture. We could look at a RID in this area. (C. Wilkinson)

43. Question: For Requirement 4.2.2, does the 8 hours represent the time from LPS data availability notice through transfer into the LP DAAC?
Answer: Yes.

MANAGEMENT TOPICS - E. Valencia

44. Question: Does your prototype consist of one string? (J. Andary)
Answer: It is only the SGI CPU. (E. Valencia)

45. Question: Is there custom hardware for Frame Sync?
Answer: No, it is handled by software. (E. Valencia)

46. Comment: We are trying to have all COTS hardware. (D. DeVito)

47. Question: What is the Build 1 capability? Will it process the ETM data flow?
Answer: That has to be determined. (E. Valencia)

Comment: The first data flow may not have science data.

Comment: Build 1 is not system tested until after May 1996. (E. Valencia)

48. Comment: There may be a transition format and more than one format to the users. (D. DeVito)

49. Comment: We will be open to meeting requirements from the International community. (D. DeVito)

50. Comment: RIDS are due in two weeks.

Disposition: The LPS system requirements were approved by the IPD CCB subject to the resolution of any RIDs that are received.